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Report to the Honorable
Charles E. Bennett, House of
Representatives

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GOVERNMENT CONTRACTING

Effect of Changes in Procurement and Tax Policy on the Defense Industry

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May 17, 1989

The Honorable Charles E. Bennett
House of Representatives

Dear Mr. Bennett:

As requested, we analyzed the MAC Group[1] study entitled The Impact on Defense Industrial Capability of Changes in Procurement and Tax Policy—1984-1987. Specifically, you asked us to (1) analyze the reliability of the "raw data," (2) identify the study's methodology and assumptions, and (3) evaluate the relevance of its findings and recommendations to proposals made by H.R. 3134[2] and our proposal for a profitability reporting program.[3]

The Aerospace Industries Association of America, the Electronic Industries Association, and the National Security Industrial Association whose members include a number of defense contractors jointly funded the MAC Group Study. One objective the MAC Group was specifically asked to address was the financial and operating impact of selected changes in procurement and tax policies on the defense industry.

The study, using data from nine companies, concluded that the combined uncoordinated governmental policy changes are affecting the financial condition and operating results of defense firms to the point where it may be uneconomical to do business with the Department of Defense (DOD).

Adequate Data Not Available to Measure Impact of Policy Changes

While we agree with a basic concept of the MAC study—that the cumulative impact of policy changes should be considered before the changes are made—our analyses indicate that based on limited data available, MAC's conclusions cannot be validated for the defense industry as a whole. Our critique of the MAC study should not be construed as our concluding that the policy changes addressed in the MAC study do not have a negative impact on contractor profitability and cash flow. While

[1] The MAC Group is a faculty based international general management consulting firm.

[2] H.R. 3134 was proposed legislation in the 100th Congress to improve accountability over profits made by large contractors under negotiated defense-related federal contracts. Legislation on profitability reporting has been introduced in the 101st Congress as H.R. 73.

[3] Government Contracting: A Proposal for a Program to Study the Profitability of Government Contractors (GAO/NSIAD-87-175, Sept. 17, 1987).

the cumulative effect of the changes analyzed by MAC may be negative, the data is simply not available to determine their significance. This need for data can be accommodated best by information gathered, verified, and studied under a profitability reporting program.

We are concerned that adequate accounting and financial data is not available to measure the impact that all existing policies and changes are having on overall defense contractor profitability. When sufficient information is unavailable to evaluate proposed changes to statutes, regulations, and DOD management practices that affect defense procurement, a resolution may be reached without adequate data and technical analysis to support policy revisions. The MAC study seeks to show the impact of six policy actions, but it did not ascertain the industrywide level of profitability of contractors either before or after these policy changes.

Quantifying the Effect of Six Government Policies

The MAC study focused on quantifying the effect of six policy changes affecting defense procurement that were implemented from 1984 to 1987. MAC analyzed data on one weapon program each, thought to be representative or typical, of the nine anonymous companies. The six government policy changes were

- lower progress payment rate,
- tax law changes,
- special tooling investments,
- new profit policy,
- cost sharing on development programs, and
- lower cost recovery (unallowable expenses).

The contractors furnished MAC financial data for these nine programs. These data were used to demonstrate the performance of the programs under the prior acquisition and tax policies; this demonstration represented MAC's "Base Case." MAC then developed a method of estimating the profits and cash flows that would have occurred had these six changes been in effect when each of the programs began. The cumulative result of these calculations is referred to as the "Impact Case."

Comparing the base case and the impact case, MAC estimated the effect that the six changes had on the profitability and cash flow of the nine programs and by implication on all future defense programs.

By assuming that the six policy changes had been in effect when the programs began, MAC reported that the policy changes would cause

- a 23-percent reduction in profits,
- an additional financing requirement for the nine contractors of $8.5 billion, and
- a return on investment for the nine programs to be less than the return necessary to preserve shareholder value.

MAC postulates from these conclusions that the changes in procurement and tax policy have a sizable negative impact on the defense industry.

Support Not Available for Impact of the Six Policy Changes

We analyzed the study and attempted to evaluate the reliability of its supporting data. We were denied access to the data. According to study officials, we could not have access because its disclosure could affect the stock prices of the participating companies. Since we did not have access to the data for the nine programs, we could not quantify the study's conclusions as they relate to the nine programs. Therefore, we analyzed the methodology in relation to the study's stated impact on the nine companies to the extent we were able and the implications to the defense industry as a whole. Appendix II contains a more detailed discussion of our objectives, scope, and methodology.

Our evaluation of the available data and the methodology used by MAC does not support MAC's quantification of the six policy changes. Our analyses of readily available national data bases, policy changes made after the study, and MAC's assumptions indicate that the return on investment analysis, profitability reduction, and additional financing requirements are not adequately supported if projected to the defense industry as a whole.

Available Public Data Does Not Support MAC's Analysis

Efforts such as the MAC study are not an adequate substitute for regular data gathering and a systematic evaluation of the cumulative effect of policies on the financial condition of government contractors as proposed by H.R. 3134 or our profitability reporting proposal.

We reviewed various public data bases that reflect the overall trends in defense industry performance in specific areas and found that many of MAC's assumptions could not be substantiated. For example, MAC left the impression that:

- In measuring the impact of the tax policy changes for the defense industry, the nine defense contractors it studied were similar to all defense contractors in their use of the completed contract method (CCM) of tax accounting.

  Our examination of the annual reports of 78 of the largest publicly held prime defense contractors, accounting for 62 percent of the prime defense contract dollars in 1987, showed that 44 (or 17 percent of these contract dollars) of the contractors did not report using CCM, and therefore, were for the most part, not negatively affected by the CCM changes. The 1987 annual reports showed that the defense contractors deferred a substantial amount of taxes for reasons other than for CCM. We were told that for the nine companies included in the MAC study, CCM was the primary reason for tax deferrals. Therefore, it appears that the contractors reviewed by MAC differed from many other defense contractors in how they deferred taxes.

- The reduction in the progress payment rate from 90 percent to 75 percent is permanent and some companies will have to borrow heavily and the additional financing will likely exceed the amount that can be borrowed.

  Progress payments do reduce the contractors' need to borrow money to finance contract costs. However, history shows that progress payment rates are influenced by interest rates. DOD data shows that changes in the progress payment rates are related to changes in borrowing rates. As further evidence of this relationship, DOD increased the progress payment rate to 80 percent on October 1, 1988. This increase will negate some of the impact of MAC's assumption. MAC also did not recognize that DOD's new profit policy explicitly compensates companies for the expense of financing contract costs, and is constructed so that profit objectives for working capital automatically changes inversely to changes in progress payment rates. This policy is designed to offset the need for increased financing because of decreases in the progress payment rate.

- Because of a DOD policy change that required more use of fixed-price contracts for research and development contracts, contractors would be required to "cost share" 20 percent of the costs on all advanced development contracts.

While there may have been cases of fixed-price contracts used for research and development efforts, our review of historical data on contract types disclosed that in practice the use of fixed-price type research, development, test, and evaluation contracts had not increased during the period covered by the MAC study. In addition, after publication of the study, legislation was passed[4] that should limit the use of fixed-price contracts for developmental efforts.

Appendix I contains a more detailed discussion of problems that we identified with the MAC study assumptions and methodology.

Other Methodological Problems

We found other problems with MAC's methodology. For example, the study used accrual data rather than actual cash flow data in its net present value[5] computation. Accrual data includes items that do not require the outlay of cash (i.e., depletion, depreciation, and other amortized expenses). Therefore, by using this data, cash outflows are overstated and could cause incorrect conclusions concerning the attractiveness of an investment. MAC explained that adjusting the accrual data from the books of account to a cash basis would be time consuming and expensive. MAC also explained that its analysis was only measuring the difference between the base and impact cases, and assumed that "whatever differences there are between accrual and cash accounting would not change as a result of the restatement and would be insignificant over the long term."

MAC used accrual data in determining return on investment using net present value. This methodology caused the overstatement of cash outflows, which resulted in two problems: (1) understatement of net cash flow and (2) inability to correctly compute net present value. This understatement of the return on investment could produce incorrect conclusions concerning the attractiveness of an investment. In other words, MAC's analysis could have caused incorrect conclusions on whether a company would have bid on the defense programs. However, without access to the data, we could not determine the impact that the use of accrual data had on the study's results.

[4]The National Defense Authorization Act, fiscal year 1989, requires the Secretary of Defense to revise DOD regulations to limit the use of fixed-price type contracts in a development program.

[5]Net present value is used to evaluate investment decisions in which cash inflows and cash outflows occur over a period of at least 3 years. The technique involves estimating all future cash inflows and outflows over the life of an investment, and then discounting these cash flows to the present using a required rate of return.

In its study, MAC considered its data to be "typical" of the defense industry. Without knowing the firms involved, what programs were used, and what contracts were considered to have constituted the programs, it is difficult to conclude that the programs represented the entire defense industry.

The study's inability to show how the nine companies and their programs represent the defense industry as a whole is especially serious because each company volunteered to participate in the study. Thus, certain characteristics of the companies and programs included in the study may have biased the results. Further, the data submitted was not independently verified by the nine anonymous companies' Certified Public Accountants (CPA).

Another problem with MAC's methodology was that the MAC study does not explain how the nine anonymous companies took into consideration any behavioral changes that might occur due to the policy changes. Therefore, we do not know whether behavioral changes were adequately considered, although we know that companies have modified their behavior as a result of governmental policy changes. For example, we noted in a previous report[6] that after the Federal Acquisition Regulation (FAR) was amended to provide that travel and per diem in excess of government limits were no longer allowable as contract costs, a government contractor took steps to encourage its employees to use travel arrangements that approximate the per diem expense levels set for federal employees. Several companies made efforts to obtain discount rates at selected hotels and motels.

Another example of how contractors will modify behavior to accommodate policy changes is illustrated in Lockheed's 1987 Annual Report where it stated:

> "The Department of Defense, over the past few years, has instituted policies and procedures to reduce progress payments and lengthen the period of time between the receipt of contractor invoices and payment of such invoices. Although these new policies have affected working capital requirements, the effects have not been material. The company has been undertaking and will continue to undertake reasonable steps to mitigate any negative impact of the Department of Defense policies."

[6]Contracting: Revised Per Diem Cost Principle Effect on Defense Contractors (GAO/NSIAD-88-59, Dec. 1987).

Need for a Profitability Reporting Program

We believe the MAC study, as well as other studies, such as DOD's Defense Financial and Investment Reviews (DFAIR), underscores the need for a profitability reporting program. Such a program would give policy-makers verified information to systematically analyze the cumulative impact of government policies on defense contractors' profitability. Without verifiable industry profitability data, questions will always be raised about the financial impact obtained under existing policies. Systematic reporting and analysis of prevailing profit levels would provide for more reliable data to indicate defense contractor profitability than ad hoc "impact" studies represented by the MAC study.

Your amendment (H.R. 4264) to the House Defense Authorization bill would have been a major step in correcting this situation. The National Defense Authorization Act for fiscal year 1989 included portions of the amendment you sponsored, but did not include the important requirement for contractors to furnish the needed profitability data. We believe that this requirement is needed and we will continue to encourage the adoption of such a program.

A consultant panel (identified in app. V) we appointed reviewed and commented on a draft of this report. Not every member of the panel agreed with all aspects of the report. However, it was unanimously agreed that this report and the MAC study indicate the need for collecting verified data that can be used to estimate the cumulative effect of making periodic policy changes.

Agency and Other Comments

We provided a draft of this report to the MAC Group and DOD for their review and comment.

The MAC Group stated it stood behind its findings and conclusions and accepted only one of our criticisms. Detailed discussions of MAC's comments and our evaluation are included where appropriate in appendix I. The entire text of MAC's comments is contained in appendix III.

DOD continues to disagree strongly with our position on the subject of profitability reporting. (See app. IV.) DOD said that it has performed studies of defense contractor profitability in the past without a legislative requirement and will continue to do so in the future as needed.

In the past, DOD has performed these studies infrequently, using data gathered on an ad hoc basis. DOD, in doing studies of defense industry profitability, has used different types of data and different methods and

approaches for interpreting the data collected, which have materially affected the conclusions drawn. We therefore continue to believe that legislation is needed to ensure that financial data are collected on a regular basis and the analytical methodology to evaluate profitability is consistently applied.

We plan to distribute this report to interested parties and make copies available to others upon request.

This report was prepared under the direction of Paul F. Math, Director, Research, Development, Acquisition and Procurement Issues. Other major contributors are listed in appendix VI.

Sincerely yours,

Frank C Conahan

Frank C. Conahan
Assistant Comptroller General

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Abbreviations

CCM	Completed Contract Method
CPA	Certified Public Accountant
DFAIR	Defense Financial and Investment Review
DOD	Department of Defense
FAR	Federal Acquisition Regulations
FEI	Financial Executive Institute
GAO	General Accounting Office
IR&D and B&P	Independent Research & Development and Bid & Proposal
MAPI	Machinery and Allied Products Institute
RDT&E	Research, Development, Test and Evaluation
STTE	special tooling and test equipment

The MAC Group Report— The Impact on Defense Industrial Capability of Changes in Procurement and Tax Policies

In 1985, DOD issued a profitability study entitled DFAIR. The report concluded that, among other things, from 1980 to 1983 defense contractors were more profitable than durable goods manufacturers. Based partly on DFAIR, DOD revised its profit policy in 1987. A series of other governmental policy changes were also made from 1984 to 1987 that would affect defense procurement and profits. The following policy changes are included in the MAC Group evaluation:

- Tax law changes. Since 1976, tax laws have allowed companies with long-term manufacturing contracts the option of deferring recognition of at least part of the income on a contract until it was completed. Such deferral of income would have a corresponding deferral of tax payments. This is known as CCM. Defense contractors frequently have long-term contracts, and since 1976 have often taken advantage of this tax provision. Starting in 1982, the tax laws were changed to progressively reduce the amounts of income that could be deferred for tax purposes. These changes result in earlier tax payments.

  The other tax law change that MAC considered was the reduction in the maximum corporate tax rate, from 46 percent to 34 percent.

- Lower progress payment rate. Since 1954, the government has provided progress payments to contractors with fixed-price contracts to assist in financing its work in process. During the period covered by the MAC study, 1984-87, the progress payment rate was reduced in two steps from 90 percent to 75 percent.
- Special tooling investments. Until several years ago, government contractors had traditionally been allowed to charge special tooling and test equipment (STTE) as a direct contract charge, and were reimbursed as these costs were incurred. In 1986 and 1987, legislation was passed that required contractors to capitalize some portion of STTE, which meant that these expenses would not be fully reimbursed as they were incurred. A portion of these costs would be capitalized and recovered over time. MAC estimated the impact of this capitalization of STTE and the resulting slower recovery of these costs through depreciation over a period of years.
- Cost sharing on development programs. MAC stated that during the period covered by its study, contractors have frequently been required to pay a part of research and development costs. Research and development efforts are generally procured under cost reimbursement contracts because the tasks to be accomplished are uncertain. The MAC study reported that using fixed-price type development contracts for research and development efforts has increased. MAC believes this could mean

that research and development contract costs, for which contractors will not be reimbursed, will increase.

- New profit policy. In 1987, DOD revised its profit policy that applied to negotiated defense contracts. The new policy was designed to, among other things, decrease the emphasis placed on contract costs and increase and redistribute the portion of prenegotiation profit objectives to be based on facilities capital. In addition, in a memorandum that accompanied the development of the policy, DOD expressed the intent to reduce overall prenegotiation profit objectives by 1 percent. Consequently, the MAC study assumed that contract profits would be reduced by 1 percent over the life of the nine programs.
- Lower cost recovery (unallowable expenses). The government, for reasons of policy, establishes rules for the allowability of contract costs. For example, certain expenses by contractors in excess of established limits are not reimbursed as cost and therefore, result in reducing contractor's profitability. One element of costs that the government does consider allowable is called Independent Research and Development (IR&D) and Bid and Proposal (B&P) costs. In 1970, the Congress passed Public Law 91-441, as a control mechanism, which required DOD to negotiate ceilings on the amount of IR&D and B&P costs that would be reimbursed to defense contractors. The MAC study asserts that contractor recovery of this significant cost element has decreased and therefore adversely impacted profitability.

Concern was voiced by the defense industry that these changes had gone further than necessary in reducing contractor profitability. For example, in 1987 the Financial Executives Institute (FEI) and the Machinery and Allied Products Institute (MAPI) issued reports that addressed in nonquantified terms the adverse impact that these policies would have on defense contractor profitability.

The FEI and MAPI studies did not quantify their results, but concluded that selected policy changes will adversely affect the profitability and financing requirements of defense contractors. In an attempt to quantify the cumulative effect of selected changes in legislation, regulation, and management practices, the MAC Group study went beyond what the FEI and MAPI studies attempted.

The MAC study was jointly funded by three industry associations—the Aerospace Industries Association of America, the Electronic Industries Association, and the National Security Industrial Association. Specifically, the MAC Group was requested to:

- "Determine the financial and operating impact of the [policy] changes on the defense industry.
- "Identify the way the industry is likely to react to the changes, and assess the probable impact on industry structure and performance.
- "Determine the public policy implications of this impact.
- "Recommend an appropriate government response to [MAC's] findings."

The MAC Group did not have access to industrywide data. Based on contractors' data from the nine companies whose identity the MAC Group could not reveal, it concluded that the six governmental policy changes would have a cumulative effect on the financial condition and operating results on the defense industry to the point where it may be uneconomical to do business with DOD in the future.

Since we did not have access to the data for the nine programs included in the MAC study, we analyzed the methodology in relation to the study's stated impact on the nine companies to the extent we were able and the implications to the defense industry as a whole.

Without knowing the firms involved, what programs were used, and what contracts were involved in the programs, we were unable to conclude that the data obtained were sufficient to support the implication that the results are applicable to the entire defense industry.

Appendix II contains a more detailed discussion of our objectives, scope, and methodology used in evaluating the MAC study.

The MAC Group Study's Methodology and Assumptions

MAC analyzed data from one program for each of the nine anonymous companies assumed to be representative, or typical. The contractors furnished the MAC study with the financial data that was used to demonstrate the programs' performance under the then existing acquisition and tax policies. This demonstration represented MAC's base case. The MAC study then developed a method of estimating the profits and cash flows that would have occurred had these six changes been in effect at the beginning of each program. The cumulative result of these calculations is referred to as the impact case.

Comparing the base case and the impact case enabled MAC to estimate the effect the six changes had on the profitability, cash flow, and return on investment of each program and its implication on the entire defense industry in the future.

By assuming that the six policy changes had been in effect when the programs began, MAC reported that the policy changes would cause

- profits to be reduced by 23 percent,
- additional financing requirements for these nine contractors of $8.5 billion, and
- a return on investment using a net present value[1] analysis for the nine programs to be less than the return necessary to preserve shareholder value.

From these conclusions, MAC postulates that the changes in procurement and tax policy have a sizeable negative impact on the defense industry. While we agree with a basic concept of the MAC study—the cumulative impact of policy changes should be considered before the changes are made—our analyses indicate that based on limited data available, MAC's conclusions and implications for the defense industry as a whole cannot be validated, but they appear to be significantly overstated.

The Impact of Selected Tax Policy Changes

The MAC study stated that

> "the [defense] industry has traditionally deferred tax recognition of profits (and hence tax payments) until the end of a contract, when actual profit is known, under an approach known as the completed contract method."

MAC assessed the changes to two tax provisions, the reduction in the maximum statutory corporate tax rate from 46 percent to 34 percent and modifications to the CCM of accounting for long-term contracts. The CCM modifications substantially reduce the amount of taxes that can be deferred on long-term defense contracts. However, the CCM changes do not increase the total amount of taxes that have to be paid. They do result in tax payments having to be paid sooner, which increases contractor cash requirements in the near term.

MAC's Determination of Impact

MAC concluded that the two tax policy changes would require $3.9 billion in additional financing because taxes would have to be paid sooner. The MAC study indicates that the additional funds that must be

[1]Net present value is used to evaluate investment decisions where cash inflows and cash outflows occur over a period of at least 3 years. The technique involves estimating all future cash inflows and outflows over the life of an investment, and then discounting these cash flows to the present using a required rate of return.

obtained, as a result of the two tax law changes, are equal to about 23 percent of the total equity of the nine contractors in 1985.

Our Assessment

In measuring the impact of the tax policy changes, MAC

- implied that the nine defense contractors it studied were similar to all defense contractors in their use of CCM,
- explained that the financial impact of tax law changes would be realized over a period of years but did not quantify the amount by year,
- assumed that the nine defense contractors in the study had used CCM since program inception and implied that this represented the industry as a whole, and
- appeared to have understated the increase in reported after tax profits.

The Nine Defense Contractors Included in the MAC Study Are Not Similar to All Other Defense Contractors in Their Use of CCM

The nine defense contractors in the MAC study do not appear to resemble all defense contractors in their use of CCM. For the nine contractors included in MAC's sample, CCM was the largest component of total tax deferrals. In our review of 78 of the largest defense contractors, this was not always the case.

We determined the CCM usage by reviewing annual reports for 78 of the largest defense prime contractors. We attempted to determine the uses of CCM for the 100 largest defense prime contractors for 1987. Only 78 of the top 100 defense contractors are publicly traded. Our sample of 78 represents the largest publicly traded defense contractors and accounts for about 62 percent of DOD prime contract dollar awards for fiscal year 1987. Our examination of the annual reports of these 78 defense contractors showed that 44 of these contractors did not report using CCM in 1987, and therefore, were not materially affected by the changes to CCM. These 44 defense contractors represent about 17 percent of DOD's prime contract dollar awards for fiscal year 1987. In addition, our analysis showed that the 78 defense contractors defer a substantial amount of taxes for reasons other than for CCM, which contrasts markedly with the 9 defense contractors in MAC's analysis.

The nine defense contractors included in MAC's sample differed from many of the contractors in our wider sample in that almost all of the nine contractors' total tax deferral seemed to be related to CCM. The nine contractors in MAC's sample had very little in the way of accumulated deferrals other than CCM deferrals. Their 1985 CCM deferral balance of $4.7 billion presented in the MAC study was 89 percent of the total

noncurrent liabilities, presumably including other deferrals. In contrast, in 1986 the 78 publicly traded defense contractors had a total annual deferral of $7.2 billion, which included an annual CCM deferral of only $1.1 billion. Thus, in 1986, the total annual deferral for these 78 contractors was at least six times greater than the CCM deferral. The 78 defense contractors deferred about $6 billion for reasons other than CCM, including depreciation and amortization, pensions and employee benefits, restructuring effect, discontinued operations, inventory valuations, installment receivables, and leasing.

MAC Financing Computations of Tax Changes Overstated Their Effect and Do Not Reflect Amounts Needed Annually Over a Period of Years

MAC's report noted that the full financial impact of the various tax policy changes may not be seen in defense contractors' financial statements for more than 4 years. However, MAC's computations on the impact of the tax changes do not show the additional financing needed annually. Consequently, the reader cannot determine when the financing need would arise and thus, it is difficult to judge the burden of the tax reform changes.

MAC reports that the tax policy changes would require nine defense contractors to finance an additional $3.9 billion. This figure represents the expected payment of taxes over a period of years. MAC estimates the financing needs by assuming that all the tax law changes occurred simultaneously rather than determining the effect of each tax law change individually, as enacted by the Congress. By retroactively applying these tax law changes affecting CCM, the effects of these laws were overstated.

MAC's estimate of $3.9 billion appears high because the effective dates and transition periods given in the tax laws were not considered. The Congress enacted changes in different years and phased them in over time. MAC assumed that the CCM tax law changes were fully effective immediately, instead of being phased in, starting in 1982, 1986, 1987, and 1988. MAC also assumed that CCM was a "traditional" approach used by defense contractors when, in fact, it was fully available to them only between 1976 and 1982.

To evaluate MAC's estimate of the $3.9 billion financing need, we reviewed selected defense contractor tax data for 1986 and 1987, as shown in table I.1. We reviewed changes in annual deferrals related to the use of CCM since this was the only available financial data attributed directly to CCM in corporate annual reports. We reviewed this deferral

data for all 78 publicly traded defense contractors, which included all 34 publicly traded defense contractors reporting the use of CCM.

Table I.1: Tax Deferrals for 1986 and 1987

Dollars in billions

78 publicly traded defense firms	1986	1987
Provision for taxes	$21.4	$26.6
Deferred taxes	7.2	5.8
CCM deferral	1.1	(0.5)

As shown in table I.1, a positive amount for CCM deferrals is shown in 1986 and a negative amount is shown in 1987. In the normal cycle of contracts beginning and ending, the downturn in CCM deferrals might have occurred anyway. Companies whose CCM deferrals increase are still deferring taxes at a faster rate than they are paying off previous deferrals. In contrast, reductions in CCM deferrals mean that for those contractors, the taxes paid on completed contracts exceeded taxes deferred on uncompleted contracts. Even with the downward change in CCM deferrals for 1987, we cannot determine if the overall decrease in the CCM annual deferrals is due to the Tax Equity and Fiscal Responsibility Act of 1982, or the Tax Reform Act of 1986, or whether the turnaround is caused by other factors such as companies completing more contracts in 1987. If these contracts were being completed, the burden would have been imposed independently of tax reform.

MAC's computations do not consider that contractors may change their behavior in response to these tax law changes. For example, if contractors know that their potential tax liability is going to increase, they can attempt to protect their profitability position by raising prices.

Further study and additional data are needed to fully assess the effects of the restrictions on the use of CCM by recent tax laws. One approach for these studies would be to obtain actual tax data (current and deferred taxes) from companies as well as information regarding ongoing contracts and contracts completed during selected periods of time.

MAC Assumed Use of CCM Since Program Inception

In computing cash flow, MAC assumed, for each of the nine programs included in its study, that CCM was used before 1976. According to MAC, the Internal Revenue Service permitted aerospace companies to use CCM beginning in 1973. However, the Internal Revenue Service did not modify its regulations to allow defense contractors to use CCM until 1976.

According to MAC, the nine programs had an average life of 18 years (ranging from 7 years to 23 years), and seven of the nine programs were scheduled to be completed by December 31, 1988. Thus, the average start date for these seven programs was January 1, 1971 (December 31, 1988, minus 18 years), or about 5 years before the Internal Revenue Service modified the CCM regulations to allow manufacturers, including defense contractors, to use CCM. Therefore, MAC may not have properly evaluated the impact of the CCM changes for the defense industry, since the old CCM rules did not appear to have taken effect until after some of the programs had already started. If so, MAC overstated the impact of the tax policy changes, and thus, this error resulted in an overstatement of base case after tax cash flow.

MAC Appears to Have Understated the Increase in Reported After Tax Profits

In MAC's analysis of the impact on profitability, the MAC study recognized the impact of lower tax rates, and it points out that for the nine companies the resulting increase in contractors' equity amounts to $520 million. However, according to current accounting standards that apply to public financial reporting, $225 million of the $520 million is treated as an adjustment of shareholders' equity and not as part of income. We believe that while $295 million of the total $520 million is the portion of the gain from lower tax rates that is attributable to the operation in the year 1985, the remaining $225 million also represents a gain to the contractors. The $225 million is attributable to prior years' tax provisions that later proved to be excessive and, therefore, are reversed as lower tax rates are introduced during the period covered by the study. The approach MAC followed is appropriate for presenting proforma financial statements for a single year. However, for a study that seeks to determine the cumulative impact of various policy changes on the defense industry profitability, it does not capture the full effect of tax rate changes. Therefore, we believe that for the type of study done by the MAC Group, the entire $520 million should be treated as an increase in income for the period covered by the study.

MAC Group Comments

The MAC Group was provided a list of the 44 contractors who did not report using CCM in 1987. MAC found that five of the contractors were listed on another report[2] as using CCM. Our earlier report identified contractors that reported using CCM in their annual reports for the 5-year period from 1980 through 1984—whereas, our current examination was

[2]Tax Policy: Congress Should Further Restrict Use of the Completed Contract Method (GAO/GGD-86-34, Jan. 1986).

of the 1987 annual reports of the 78[3] largest publicly traded defense contractors.

MAC stated that it compared the list of the 50 largest contractors in terms of fiscal year 1987 prime contract awards and stated that 32 contractors used CCM. MAC calculated that these 32 contractors had 79 percent of the total dollar amount awarded to the 50 largest contractors and stated that the dollar amount is much more important than the number of companies.

We agree that the restrictions on the use of CCM will have a negative impact on the profitability and cash flow of selected defense contractors who do hold the bulk of the dollar value of defense contracts awarded. However, the primary point of our analysis is that MAC overstated the effect of the restrictions placed on the use of CCM for the defense industry as a whole because a large number of defense firms do not report using CCM. In addition, the CCM changes were phased in over time and their impact will become apparent only over time.

In determining the impact on financing requirements, the MAC Group reported the cumulative effect of the tax law changes. MAC stated that it did not request the contractors to make year-by-year estimates because these estimates would have been based on the companies' judgments about the timing of cash flows, profits, dividend policies, capital spending, and additional borrowing or equity financing. As stated earlier, MAC's financing computations of tax law changes overstated their effect and do not reflect the amounts needed annually over a period of years. We believe the annual financing requirements would better explain the cash flow burden placed on contractors due to the restrictions on the use of CCM. The principal benefit to taxpayers who defer reporting profits lies in the time value of the money they retain by postponing tax payments.

MAC pointed out that "the IRS permitted aerospace companies to use CCM beginning in 1973, not 1976, and several companies did so." We understand that exceptions were made for selected manufacturing firms to use CCM before 1976 and have modified our report. However, while MAC noted that the CCM changes for the defense aerospace industry are very significant, it must consider the impact of changes to CCM on a variety of companies not just aerospace companies.

[3]We used data from the largest publicly traded defense contractors in analyzing MAC's assessment of the possible impact of only one of the six policy changes—namely the restrictions on the use of CCM.

MAC agrees that it erred in assuming that the three programs beginning before 1973 would have used CCM, but MAC states that this error led to an understatement of the impact. MAC stated that if these companies had used cost sharing but without CCM, they would have reported a tax loss on these contracts each year, rather than deferring the loss until each contract was completed. We agree. However, we disagree with MAC's estimate of cost sharing. We believe that it is incorrect to assume that contractors would participate in cost sharing on all contracts over the entire life of an 18-year program.

In determining the impact of profits, the MAC study did not recognize the full impact of the lower tax rates. We recognize that the approach followed by MAC is appropriate for financial reporting. However, for a study that seeks to determine the cumulative impact of various policy changes, such presentation does not capture the full benefits of tax rate changes. Accordingly, we believe that a report purporting to capture the full impact of the tax rate changes should note the entire $520-million benefit.

The Impact of Lower Progress Payment Rates

The government provides progress payments[4] to help finance a contractor's work in process on fixed-price contracts. The progress payment rate is applied to contract costs. The customary progress payments are made monthly and may not exceed a certain percent of incurred costs. As the MAC study states, the defense industry has traditionally received this "interest free government financing" for much of its work in process.

MAC's Determination of Impact

During the period involved (1984-87), MAC pointed out that the progress payment rate has dropped from 90 percent or more to 75 percent. MAC calculated that this decline in the progress payment rate would have required nine companies to finance an additional $2.6 billion in 1985. MAC multiplied the nine companies unliquidated progress payment balance by 78 percent. We were told that DOD provided MAC with the 78-percent average progress payment rate used in the study. The rate represents the average progress payment rate when the customary rate is 75 percent. This rate consists of the 75-percent customary rate,

[4]The government does not recognize interest as an allowable contract cost; it compensates contractors for interest through a combination of progress payments and contract profit. To minimize the profit it must award for this factor, it makes monthly progress payments to contractors for costs incurred. Progress payments reduce the contractors' need to borrow money to finance working capital.

plus 3 additional percentage points, to include the effect of flexible progress payments.[5]

Our Assessment

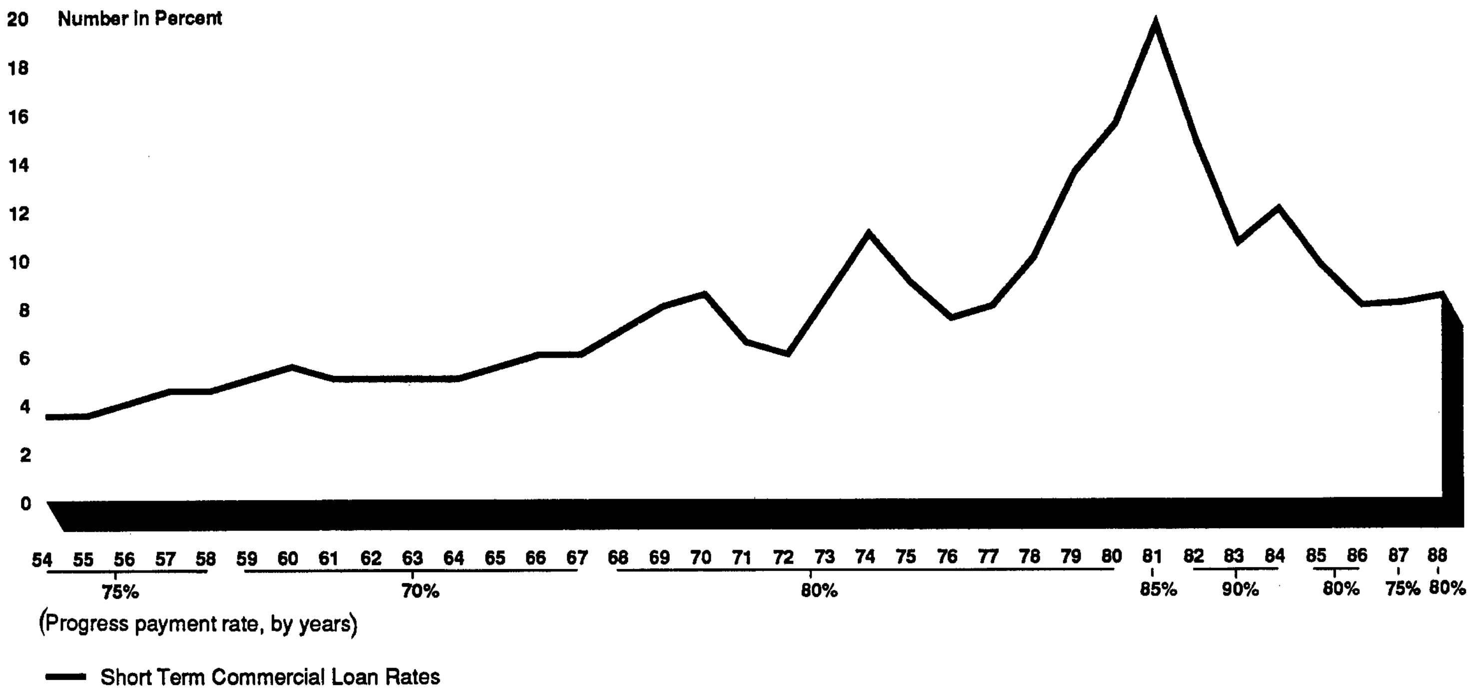
MAC's estimate is questionable partly because of an understatement of the impact, as computed by DOD, that flexible progress payments have on the average progress payment rate. We are currently performing a study of the working capital required in defense contracts. Data we have obtained from a statistically valid random contract sample subject to progress payments show that the impact of flexible progress payments may be greater than the 3 percent considered in the MAC study. Our data was developed from a random statistical sample of over 300 contracts in fiscal years 1985 through 1987. The sample included contracts with both customary progress payment and flexible rates.

While we recognize that the MAC study was evaluating policy changes made during 1984 through 1987, it is important also to recognize that over the years progress payment rates tend to vary with interest costs. MAC's estimate did not consider any increases in the progress payment rate over an 18-year period. The customary progress payment rate has not remained constant. For example, DOD announced that on October 1, 1988, the progress payment rate increased to 80 percent.

More importantly, as noted above, the level of progress payments is related to interest rates. When MAC did its analysis of the progress payment rate decrease, it assumed that the progress payment rate would remain constant for a period of 18 years. This does not reflect the relationship of progress payments and interest rates. As interest rates changed in the past, the progress payment rates have tended to vary with these fluctuations. As noted earlier, since the MAC study was issued, DOD has revised the progress payment rate up to 80 percent, partly to reflect increased interest rates. Figure I.1 shows DOD's progress payment rates from 1954 to 1988, along with the short-term commercial loan rate published by the Federal Reserve Board.

[5]Flexible progress payment rates are higher than the customary rate. The flexible rates are authorized if the contractor can demonstrate that it meets certain cash flow requirements.

Figure I.1:DOD's Progress Payment Policies Compared to Short-Term Commercial Loan Rates (large businesses)



In 1981, shortly after interest rates had approached 20 percent, the progress payment rate for large businesses reached a high point of 90 percent (95 percent for small businesses). When the rate was reduced from 90 percent to 75 percent, figure I.1 shows that interest rates had fallen.

MAC also did not recognize that DOD's profit policy explicitly compensated companies for the expense of financing contract costs, and that it is constructed so that profit objectives for working capital automatically changes inversely to changes in progress payment rates. DOD's profit policy, therefore, is designed to provide additional profit recognition because of progress payment rate decreases.

MAC Group Comments

In commenting on our report, MAC stated that progress payment rates tend to vary with interest rates, but the relationship is by no means close (the coefficient of correlation is only 0.56). We recognize that the progress payment rate would have to be indexed to the short-term commercial loan rate to obtain a perfectly correlated relationship between the two variables (interest rates and progress payment rates). We are

payment rates, but that they have fluctuated in the past and undoubtedly will in the future. We believe that since MAC used an 18-year period for its base case, it is important to recognize that progress payment rates will tend to vary with changing interest costs. MAC's estimate did not consider any increases or decreases in the progress payment rate over an 18-year period.

DOD Comments

DOD suggested that we should revise our report to state that the profit policy is designed (1) so that DOD profit objectives for working capital automatically changes inversely to changes in progress payment rates and (2) to provide additional profit recognition because of decreases in the progress payment rate. We revised the report to incorporate these suggestions.

The Impact of Slower Special Tooling Investment Recovery

The Defense Appropriation Act for fiscal year 1987 required defense contractors to fund at least 50 percent of the STTE cost. These expenses were previously reimbursed as direct costs to a contract as they were incurred. However, if equipment must be capitalized, there would be a delay in the contractor being reimbursed for these expenses. MAC assumed that 50 percent of annual expenditures on STTE were recovered in the year incurred, with the remainder capitalized and amortized over a 10-year period. Thus, MAC used this assumption to show a further slow down in contractor cash flow requiring increased investment without recovery of the cost of financing the investment.

Although this assumption was valid at the time of the study, the National Defense Authorization Act for fiscal years 1988 and 1989 enacted new provisions regarding STTE capitalization. The 1987 act required contractors to capitalize at least 50 percent of STTE. The 1988/89 act, enacted into law in December 1987, established 50 percent as a ceiling (rather than a minimum), which DOD negotiators could not exceed in requiring contractors to capitalize STTE. This change enabled contracting officers to allow companies to charge, as contract costs, at least 50 percent and possibly up to 100 percent of their STTE. Thus, although the MAC study analyzed the impact of the fiscal year 1987 policy, this policy had already changed before the study was completed.

MAC's Determination of Impact

MAC calculated that the 1987 change in STTE would require $1.4 billion in additional financing for the nine companies. The estimate is based on the companies' 50 percent capitalization of STTE. The $1.4 billion represents the 1985 net book value of STTE capitalized by the companies during the 5-year period—1981-85.

Our Assessment

To the degree that MAC's estimate was based on companies being required to capitalize 50 percent of the STTE used on a contract, we believe it is overstated. Because of the 1988 change, we believe it is highly unlikely that every negotiated contract will require contractors to capitalize STTE up to the legislative ceiling of 50 percent.

Further, our analysis of MAC's calculations indicate that it did not take into account the additional revenue that contractors would have received in the form of the cost of money[6] on the capitalized STTE. To the degree that an allocation for the cost of money associated with STTE was not included in the study, we believe that MAC overstated the additional financing needed as a result of defense contractors being required to capitalize STTE.

MAC Group Comments

The MAC Group responded to our critique by stating that it could not have analyzed the changes made after its study was completed. We agree that some changes were made in the special tooling area that may have come too late to be considered in the MAC study. We have highlighted these changes to caution the reader that changes have occurred that may mitigate the negative impact of slower STTE recovery cited in the MAC study.

MAC further stated that "at the time of [its] study, there was no provision made for the recovery of the cost of money on the capitalized assets. Such a provision was made after [its] study was completed." We disagree. If STTE is treated as a capital investment that is recovered through depreciation over the life of the applicable contract or program, then the STTE qualifies for the cost of money and would have qualified since the inception of cost of money in 1976. Cost Accounting Standard 414 made cost of money allocable for contracts awarded after October 1, 1976. Cost of money is intended to provide for the allocation of the cost of a contractor's investment in facilities capital to negotiated contracts.

[6] An imputed cost determined by applying an interest rate (published by the Department of the Treasury) to a contractor's net book value of facilities capital.

Therefore, when STTE is capitalized, the government reimburses the contractor for financing needs that would tend to offset the $1.4 billion even if the legislation had not been changed.

MAC also stated that

"the balance sheet impact of the requirement to capitalize special tooling covered only the period 1981-1985 . . . . A good case can be made for starting with an earlier year, which would have produced a higher asset value and consequently an additional financing requirement."

If MAC's analysis had started with an earlier year, then the additional financing needed as a result of defense contractors being required to capitalize STTE could be offset by the cost of money.

The Impact of DOD's New Profit Policy

DOD has a structured policy for performing a profit analysis on contract actions where price is negotiated. The policy is to provide a uniform and consistent manner for rewarding risk, motivating efficient and quality performance, and stimulating capital investment in the defense industrial base.

In 1985, DOD issued a profitability study entitled DFAIR. DOD's report concluded that, among other things, from 1980 to 1983 defense contractors were more profitable than durable goods manufacturers. Based on DFAIR, DOD issued a revised profit policy in August 1987, which could, under certain conditions, reduce overall negotiated profit objectives on contracts subject to weighted guidelines up to 1 percentage point.

MAC's Determination of Impact

MAC concludes that the profit policy, which applies to the calculated negotiated profit objectives,[7] will cause actual profits to decline. MAC concludes, therefore, that the changes in DOD's profit policy will cause profits for the nine companies to decrease by $262 million and increase financing requirements by $210 million for 1985.[8]

[7]A profit objective is that part of the estimated contract price objective, which in the judgment of the contract officer, is an appropriate profit used in the negotiation process.

[8]MAC determined the impact on profit after assuming all contractors' sales were defense. However, MAC's analysis on the additional financing required was based on the companies' balance sheets reflecting the actual mix of commercial and defense sales.

Our Assessment

The MAC study assumed that negotiated contract profits would be reduced by 1 percentage point over the life of the nine programs that had an average length of 18 years. However, if DOD's profit policy works as intended, negotiated profits may increase rather than decrease in some cases.

DOD has stated that the new profit policy will not continually result in a 1 percentage point reduction in negotiated profit. DOD claims that the reduction of negotiated profits by 1 percentage point is expected to correct a flaw in the profit policy created in 1980. DOD further believes that the 1 percentage point decrease would be realized only if certain conditions would remain constant. Conditions that would have to remain constant include such things as interest rates and contractors' investments in facilities and equipment.

Further, not all procurements are negotiated using the weighted guidelines. It is unknown whether all of the contracts of the nine programs were negotiated using the weighted guidelines. In any event, the 1 percentage point reduction cannot be applied to all defense contracts as a basis for industrywide implications.

MAC Group Comments

In commenting on a draft of this report, MAC stated that the DFAIR study

> "unequivocally recommended a decrease in defense profitability by 1 percentage point (which is approximately a 10 percent reduction, not 1 percent as stated by GAO). [DOD] did not mention any of the offsetting tendencies now listed by GAO (and allegedly based on statements by unnamed DOD officials)."

MAC states that DOD's profitability study (DFAIR) recommended a decrease in defense profitability by 1 percentage point. However, as DOD pointed out the new profit policy that emanated out of DFAIR will not continually result in a 1 percentage point reduction in negotiated profit. (See app. IV.)

MAC further stated that

"as for the possibility of increasing [negotiated] profits by increasing capital investments, [MAC's] analysis shows that defense contractors will lack the capital to meet foreseen capital requirements, therefore, they are likely to decrease, not increase, capital investments."

We believe MAC's analysis does not adequately demonstrate that contractors will not make additional capital investments. We agree that negotiated profits could decrease if defense contractors do not increase their capital investment. However, one of DOD's goals with the profit policy is to incentivize capital investment. MAC's estimates did not recognize that continuing analysis of investment patterns will be made by DOD. MAC also assumed no changes in policy over an 18-year period used in its impact case.

MAC stated that

"contracts that were negotiated without using the weighted guidelines were competitive. Although there was no way to obtain quantitative data about the effect of the new environment on the profitability of such contracts, industry sources advised [MAC] that the effect would be to reduce profits by substantially more than 1 percentage point."

We agree in part with MAC that quantitative data is not available to measure the impact of these contracts in today's environment and thus, it is only speculation as to their impact on profitability.

Comments From DOD

DOD, in commenting on our report stated that a more

"accurate representation of the DOD position is that profit objectives are highly dependent on a number of factors, which are continually changing—such as (1) the level of progress payments, (2) interest rates, (3) the length of contract, (4) contract type mix, and (5) contractor investment in facilities and equipment. If each of these factors remained constant, the 1 percent decrease in profit objectives would be achieved based upon the changes made to the profit policy. However, if a significant factor (such as contractor investment in facilities) were to decrease, an even greater decrease in profit objectives could be realized. Conversely, if contractor investment in facilities were to increase, the 1 percent decrease in profit objectives probably would not be realized."

As stated earlier, DOD maintains a data base on negotiated defense profits which is intended to provide a degree of oversight on the weighted

guidelines policy. On an ad hoc basis, DOD has revised its weighted guidelines policy several times in the past because it believed the policy was not accomplishing its intended objective. As stated earlier, MAC's estimates did not recognize that there might be a change in the weighted guidelines policy if the policy were not achieving its objectives.

The Impact of Cost Sharing Through the Use of Fixed-Price Contracts for Development Contracts

The MAC study defines cost sharing to mean that

> "contractors are frequently required to pay a part of the contract research and development costs, even though another contractor might be selected to produce the resulting product, or the product may never be produced."

In its impact case, the MAC study assumes that the impact on cash flow due to cost sharing on developmental contracts is 20 percent of the cost of all advance development contracts of the nine contractors. MAC assumed that these expenditures would not be reimbursed.

MAC's Determination of Impact

MAC estimated that cost sharing decreased profits in 1985 for the nine companies by $403 million and increased financing requirements by $274 million.

Our Assessment

DOD pricing officials stated that there is no basis for the assumption that 20 percent of the total costs of all advanced development contracts either have been or will be absorbed by contractors. A MAC Group representative said that these estimates were based on an amalgamation of general estimates made by various defense contractors and defense industry analysts. We did not have access to these estimates and we could find no data that would support the cost sharing percentage used in the study. We do not consider these estimates to be supportable since no statistical data exists to substantiate MAC's assumption for the cost sharing loss of 20 percent.

In arriving at the 20 percent, MAC assumed that DOD has changed its policy to make greater use of fixed-price type contracts for advanced development efforts and that this practice will continue. We did not have statistical data readily available on whether DOD was making greater use of fixed-price type contracts for advanced development efforts. However, we did review the history of contract types used for research, development, test, and evaluation (RDT&E) awards from fiscal

years 1984 to 1987. While there may have been cases of fixed-price contracts used for developmental efforts, our review of historical data shows that the government was not moving from cost type to fixed-price type contracts for research and development work.

Further, a legislative policy change was recently made concerning the use of fixed-price development contracts. The National Defense Authorization Act, fiscal year 1989, requires the Secretary of Defense to revise DOD regulations to limit the use of fixed-price type contracts for development programs to limit their use. The policy change provides that any award (over $10 million) for development work on a fixed-price type contract must obtain the approval of the Under Secretary of Defense for Acquisition and that an analysis must be made showing that the use of a fixed-price type contract would not place undue program risk between the contracting parties. This policy seems aimed at limiting the volume of fixed-price contracts used for developmental efforts, rather than increasing their use.

MAC Group Comments

MAC commented on a draft of this report by stating that it "did not apply the 20 percent to all development contracts; [it] applied it only to advanced development contracts, which for [MAC's] programs amounted to 5 percent of total program costs." We have modified our report to reflect this point. Nevertheless, based on our discussions with DOD officials we could not find support that all advanced development contracts were being awarded on a fixed-price basis.

Further, MAC stated that "contractors gave [them] estimates ranging up to 35 percent . . . . [MAC] estimate of 20 percent, applied only to advanced development contracts, was conservative." We could find no data that would support the cost sharing percentage used in the study for advanced development contracts. No statistical data exists to substantiate MAC's assumption for the cost sharing loss of 20 percent either for advanced development or total development contracts.

MAC stated that "it is patently unfair to criticize the MAC Group for not recognizing legislation that occurred after the completion of its report—legislation that may, in fact have been influenced by the report." The legislation requiring that fixed-price development contracts be reviewed by the Under Secretary of Defense for Acquisition was enacted after the MAC study was released. We recognize that MAC's purpose was to show the effect of policies only at a point in time. Nevertheless, it is important to highlight changes to MAC's assumptions because they should lessen

the negative impact of cost sharing through the use of fixed-price contracts as portrayed by MAC.

The Impact of Lower Allowable Cost Recovery

MAC stated that

"certain categories of expenses such as travel and per diem costs in excess of government limits are no longer allowable as contract costs and hence must be deducted from contractors' profits."

MAC's Determination of Impact

MAC concluded that the impact of lower allowable cost recovery would require the nine defense contractors to raise $173 million in additional financing and reduce their profitability by $264 million.

Our Assessment

The Congress has emphasized in recent legislation that it does not want to reimburse contractors for certain types of costs. They include cost of membership in social, dining, or country clubs. These costs are identified in the cost principles section of the FAR. The fiscal year 1986 Defense Authorization Act clarified that a number of costs were unallowable and would not be reimbursed by the government. The MAC study assumed that contractors would not modify their behavior in response to the government issuing these cost principles.

We believe this may be an unrealistic assumption. For example, in a previous report[9] we noted that after the FAR was amended to provide that travel and per diem in excess of government limits were no longer allowable as contract costs, a government contractor took steps to encourage its employees to use travel arrangements that approximate the per diem expense levels set for federal employees. Several companies had made efforts to obtain discount rates at selected hotels and motels. In addition, the General Services Administration had obtained discount rates at selected hotels and motels for government contractors.

The Impact of Lower IR&D and B&P Cost Recovery

IR&D and B&P costs in excess of negotiated ceilings are a part of the expenses that MAC believes will no longer be allowable as contract costs as they had been in the past.

[9] Contracting: Revised Per Diem Cost Principle Effect on Defense Contractors (GAO/NSIAD-88-59, Dec. 1987).

IR&D means a contractor's research costs that are not required in performance of a contract. B&P is the cost incurred in preparing, submitting, and supporting bids and proposals on potential government and nongovernment contracts.

In 1970, the Congress passed Public Law 91-441, which required DOD to negotiate ceilings on the amount of IR&D and B&P costs that would be reimbursed to defense contractors through overhead. No specific dollar ceilings were set in that law; only the requirement to have ceilings was legislated.

In fiscal year 1983, the Congress went a step further and imposed a cap on the amount of DOD's IR&D and B&P reimbursement. Although the Congress has raised the cap each year, the MAC study asserts that IR&D and B&P costs expended by contractors have increased each year and DOD's reimbursements for IR&D and B&P have decreased.

MAC's Determination of Impact

MAC calculated that the congressionally imposed cap on IR&D could cost $107 million in additional financing for the nine defense contractors. The MAC study states that "one of the longer term impacts of this trend may be to discourage scientists from entering the [defense] industry."

Our Assessment

We believe that MAC's estimates of the additional financing requirements for IR&D and B&P are questionable. In fact, MAC's analysis in exhibit 14 (page 34) of its report shows an absolute reduction in contractor expenditures for IR&D in 1984, 1985, and 1986. However, as shown in table I.2, when B&P costs are included in the analysis, industrywide IR&D and B&P expenditures in absolute values increased from 1984 to 1986.

Table I.2: IR&D and B&P—Contractor Incurred Costs

Dollars in billions

	1984	1985	1986
Contractor incurred IR&D costs	$5.17	$5.04	$5.04
Contractor incurred B&P costs	1.97	2.16	2.45
Total	**$7.14**	**$7.20**	**$7.49**

Further, while it is true that the costs incurred by contractors for IR&D and B&P decreased in 1987, the absolute amount reimbursed by DOD has increased each year from 1984-87. This point is shown in table I.3.

Table I.3: IR&D and B&P—Contractor Incurred Costs and DOD Reimbursement

Dollars in billions

	1984	1985	1986	1987
Costs reimbursed by DOD	$3.02	$3.39	$3.55	$3.62
Costs incurred by contractors	7.14	7.20	7.49	7.27
Percentage of costs reimbursed to total costs incurred	42%	47%	47%	50%

Source: IR&D and B&P cost incurred by major defense contractors, prepared by the Defense Contract Audit Agency.

The study stated that since 1983 the recoverable amount of IR&D and B&P costs have been capped by a congressionally imposed ceiling. To quantify the impact of this situation, MAC multiplied the total company expenditures for IR&D and B&P activity in 1985 by the difference in the 1987 recovery rate and the 1985 recovery rate. This resulting rate is applied directly to net sales figures for 1985.

However, the study's calculation of unrecovered IR&D and B&P costs does not represent the defense industry's overall recovery rates. The MAC study asserts that lower IR&D and B&P cost recovery will lead to over $200 million in additional unreimbursed contractor costs for its sample of nine defense contractors. When we applied actual historical IR&D and B&P recovery rates drawn from a substantially larger sample of defense contractors than the nine contractors analyzed by MAC, we found that overall defense contractors were recovering a higher percentage of their IR&D and B&P costs in 1987 than in 1985. The difference is shown in table I.4.

Table I.4: IR&D and B&P Recovery Rates

Figures in percent

	MAC analysis of 9 forms	Our analysis of over 100 firms
1987	73.4	73.6
1985	81.2	72.3
Total	**−7.8**	**+1.3**

MAC's figures in table I.4 are based on data provided by nine contractors, while our analysis is based on Defense Contract Audit Agency reports covering 120 contractors for 1987 and 108 for 1985. While we agree that the 1987 recovery rate was about 73 percent, our analysis shows that the 1985 recovery rate was only 72.3 percent. Therefore, we show an increase in recovery, whereas MAC shows a substantial reduction in the recovery rate.

Further, the Congress declined to impose a congressional cap on IR&D and B&P for fiscal year 1989. The removal of the congressional cap may reduce certain perceived disincentives for contractors to invest in IR&D and B&P.

MAC Group Comments

MAC stated that it specifically requested respondents to consider behavioral changes, especially as they were evidenced in their budgets and long-range plans. Notwithstanding this consideration, the MAC study indicated that there would be an increase in the types of costs that would be unallowable. We recognize that conclusive data are not available to demonstrate whether or not defense contractors would modify their behavior. We are not in a position to comment on whether contractors should adapt to these regulations. We only point out that our previous study and one prominent defense contractor's financial statement have shown that some contractors do.

Concerning the lower IR&D and B&P cost recovery, MAC noted that "it may be that [its] sample is not representative with respect to this item." MAC stated that it did not analyze the Defense Contract Audit Agency data on IR&D and B&P.

Other Methodological Problems

The study analyzes the effect of the six policy changes on nine contractors' cash flow. It pointed out that to determine a program's viability, an analyst must have available information on the level of cash flow at the end of a program. The total cash flow, however, does not present the full story. The study states that to understand whether a program is viable, the timing of the cash flows must be considered.

The study did not use actual cash flow data, and without it, incorrect decisions could be made on whether a company should invest in a defense program. MAC used accrual data to conclude that the net present value for the nine programs would be less than the return necessary to preserve shareholder value. Accrual data includes items that do not require the outlay of cash (i.e., depletion, depreciation, and other amortized expenses), and therefore, use of these data overstate cash outflows and understate the return on investment. A MAC official explained that adjusting the accrual data from the books of account to a cash basis would have been time consuming and expensive. The MAC official also explained that the analysis was only measuring the difference between the base and impact cases. MAC assumed that "whatever differences there are between accrual and cash accounting would not

change as a result of the restatement and would be insignificant over the long term."

MAC used accrual data in determining return on investment using a net present value analysis. This methodology caused the overstatement of cash outflows, which resulted in two problems: (1) understatement of net cash flow and (2) inability to correctly compute return on investment. Therefore, MAC's analysis could produce incorrect conclusions concerning the attractiveness of an investment (i.e., whether a company would have bid on a program). However, without access to the data, we could not determine the impact the accrual data had on the study's results.

In addition to the problems created by not using actual cash flow data, the validity of its conclusions regarding the impact of the six changes on net present value suffers from the same methodological and data availability problems that we discussed previously in this appendix.

For example, two of the policy changes, cost sharing and lowered progress payments, make up 60 percent of MAC's reported impact on return on investment. We believe that the lack of data to support MAC's estimate of increased cash required because of these two policy changes makes MAC's study particularly vulnerable as a basis for predicting return on investment for either the nine programs or for the defense industry as a whole.

Another point on which we believe MAC made an incorrect assumption is that some policy changes are made with the intention of urging contractors to modify their behavior. MAC's methodology did not consider that companies will change their behavior in response to these policy changes. A recent example of this behavioral response is reflected in Lockheed's 1987 Annual Report which stated:

> "The Department of Defense, over the past few years, has instituted policies and procedures to reduce progress payments and lengthen the period of time between the receipt of contractor invoices and payment of such invoices. Although these new policies have affected working capital requirements, the effects have not been material. The company has been undertaking and will continue to undertake reasonable steps to mitigate any negative impact of the Department of Defense policies."

Conclusion

The MAC Group study did not attempt to establish what overall levels of profitability were being realized either before or after the policy

changes. Lack of available data precludes a determination of overall defense industry profitability.

MAC did indicate that "the Congress and DOD must undertake some form of impact assessment (such as that undertaken in this study) before introducing policies whose cumulative impact on the industry is as severe as [MAC has] shown."

We agree with that conclusion. However, these assessments must be made on adequate data. Currently, data are not available to determine whether industrywide profit is reasonable before and after policy changes are implemented. We believe that the defense industry would be better served if a profitability reporting system were in place to preclude the need in the future for ad hoc profitability studies made from partial, unverified data.

MAC Group Comments

The MAC Group commented on 24 specific criticisms made in our draft report. The MAC Group accepted only one of these criticisms. MAC noted that it deliberately took a conservative approach in its study. For example, MAC stated that it used a discount rate of 10 percent, which was lower than the cost of capital in the defense industry. MAC noted that if it had used a higher rate, the difference between the present values of the base case and the impact case would have been greater. We agree that the choice of a rate is very important because the rate applied has a direct effect on the results of an analysis. The 10-percent discount rate that MAC used was conservative.

MAC also stated that its approach was conservative because it did not take into account the effect of (1) the elimination of the investment tax credit, (2) decelerating depreciation schedules, (3) all unallowable costs, (4) capitalizing special tooling for the entire length of the weapon programs, (5) cost sharing on all development contracts, (6) the increased use of dual sourcing, (7) premature fixed pricing of production options, (8) the increase in auditing and paperwork requirements, (9) the delay in payment of invoices, (10) the change in the ownership of data rights, (11) criminal penalties relating to the procurement process, and (12) the costs of warranty provisions. Because it did not "attempt to quantify" the effect of all these things, MAC concluded that the cumulative effect of the changes could have been worse for the nine contractors and the defense industry. All of the 13 other policy changes listed may not have a negative impact on defense contractors. For example, one of our ongoing reviews shows that contractors are either being reimbursed directly

for the costs of warranty provisions, plus profit on these costs, or these costs are being covered indirectly through additional consideration of negotiated profit. In addition, as discussed in our report, some of these costs can be eliminated through changes in behavior.

We believe that all policy changes, including those identified by MAC, plus the many problems with MAC's methodology and assumptions demonstrates the difficulties in attempting to analyze the cumulative impact of government policies without sufficient data and a generally accepted methodology for the use of the data.

In commenting on our criticism of the representativeness of MAC's sample, MAC stated that it was intentionally focusing on companies that develop and produce weapon systems. This considerably narrowed the universe of the study's companies that constitute the "defense industry." We agree that companies that develop and produce weapon systems were more likely to use CCM. However, MAC implied in the study itself that the nine defense contractors represented all defense contractors in their use of CCM. As noted earlier in our report, not all firms use CCM to the same extent as the firms in MAC's sample. Further, we used data from the top 100 defense contractors in analyzing the possible impact of only 1 of the 6 changes—namely the restrictions on the use of CCM. We assessed the other policies in determining whether the MAC study could be used to adequately reflect the impact of the policy changes. We used various other data sets to determine that MAC's sample was not representative of the industry as a whole. For example, in evaluating the impact of lower IR&D and B&P, we examined the total amount that DOD expended in absolute values from 1984 to 1987.

In commenting on our criticism of using accrual accounting data, MAC stated the difference between accrual accounting (which measures when expenses were incurred) and cash accounting (which measures when the bills were paid) is trivial for numbers reported on an annual basis, as MAC's were. MAC stated that its income tax numbers were on essentially a cash basis. MAC stated that it did not include deferred income taxes as outflows. MAC further stated that the only significant difference between accrual data and cash data is in the treatment of fixed assets. Depending on the amount of fixed assets, the difference between accrual and cash basis can be significant. However, since we do not know the companies involved, we are not in a position to comment on whether the

difference is trivial. In its comments, MAC does not provide any additional conclusive evidence to show that the difference between computing net present value using accrual data versus cash data is in fact trivial.

In commenting on our point that no acknowledgement was made in the MAC study that the question of contractors' modifying their behavior in response to changes in federal policy had been addressed, MAC stated it specifically requested the nine companies to consider behavioral changes, especially as they were evidenced in their budgets and long-range plans. We have modified our report to state that MAC requested the nine companies to consider behavioral changes. However, the MAC study does not explain how the nine companies took into consideration any behavioral changes that might occur due to the policy changes. Therefore, we do not know whether behavioral changes were adequately considered.

MAC stated that it did not conclude or mean to imply that additional financing for the nine companies, the reduction in the present value, or any other data in the report could be extrapolated to obtain totals for the defense industry as a whole. MAC stated that it did conclude "that the negative impact of the six changes would have a substantial effect on the financial requirements and profitability of the defense industry." As previously stated, our critique of the MAC study should not be construed as our concluding that the six policy changes do not have a negative impact on contractor profitability and cash flow.

In commenting on our report, MAC noted that if we were given the data for individual programs, we could only audit the accuracy of the data input. However, our point deals with the authenticity of the data. Although we did not have access to the data, a verification by the companies' own CPA would not have violated MAC's agreement to keep the companies' submissions confidential.

MAC suggested that the Congress would be interested in being informed about the disagreements that our consultant panel had with an earlier draft of this report. With one exception, all substantive changes that the panel members suggested were accommodated. One panel member expressed the belief that we should agree with the MAC treatment of reported after tax profits. However, the other panel members agreed with the way it was treated in our report.

DOD Comments

DOD continues to disagree with us on the subject of profitability reporting. DOD stated that "while a profitability reporting program would provide overall levels of profitability for defense contractors on a cumulative basis, it would not provide data necessary to determine the impact of individual policies." We agree that early in its implementation, the profitability reporting program would provide visibility only on aggregated profitability levels. However, over time, with appropriate analytical methods, the reporting program could provide visibility on selected key individual policies affecting contractor profitability with additional refinements to be made periodically. We believe that if the government had a profitability reporting system, this information could be used to determine the overall levels of various categories on contractor profitability. This information would be valuable to policymakers both within DOD and elsewhere before considering governmental policy changes that affect contractors' profitability.

DOD stated that it has performed studies of defense contractor profitability in the past without a legislative requirement and will continue to perform profit studies in the future as needed. In the past, DOD has performed these studies infrequently, using data gathered on an ad hoc basis. In conducting studies of defense industry profitability, DOD has used different types of data and different methods and approaches for interpreting the data collected, which have materially affected the conclusions drawn. We believe that financial data must be collected on a regular basis and the analytical methodology to evaluate profitability must be consistently applied.

DOD also states that a reporting system for profit objectives and negotiated profit amounts has been maintained since 1964 and it has used this system to estimate the impact on the defense industry from changes in policies. However, DFAIR acknowledged, in 1985, that DOD's reporting system required improvements.

The reporting system was changed with the implementation of the DD Form 1547, Record of Weighted Guidelines Application. Notwithstanding the improvements that may result from DOD's new reporting system, it does not provide information on actual profitability. The current reporting system does provide information on the amount of profit negotiated on "approximately 25 percent of the dollar value of DOD contracts." However, the reporting system does not include integrated financial reporting and is not capable of providing information on actual defense industry profitability.

The fact that each time DOD has sought to determine overall contractor profitability, it has performed studies on an ad hoc basis demonstrates that the DOD reporting system is not a substitute for a profitability reporting system. In each of these ad hoc studies of defense industry profitability, DOD has collected voluntary financial data not available in DOD's reporting system. The data collected for these ad hoc studies are similar to the type of information that should be collected and verified on an annual basis.

Objectives, Scope, and Methodology

The MAC Group report, The Impact on Defense Industrial Capability of Changes in Procurement and Tax Policy—1984-1987, focused on quantifying the six policy changes' effect on defense procurement that were enacted from 1984 to 1987.

The MAC study was jointly funded by three industry associations—the Aerospace Industries Association of America, the Electronic Industries Association, and the National Security Industrial Association. The MAC Group study objectives were to:

- "Determine the financial and operating impact of the changes on the defense industry.
- "Identify the way the industry is likely to react to the changes, and assess the probable impact on industry structure and performance.
- "Determine the public policy implications of this impact.
- "Recommend an appropriate government response to [MAC's] findings."

The six government policy changes included in the study were

- tax law changes,
- lower progress payment rates,
- special tooling investments,
- cost sharing on new development programs,
- lower allowable cost recovery, and
- new profit policy.

We were asked to (1) analyze the reliability of the "raw data," (2) identify and evaluate the MAC study's methodology and assumptions, and (3) evaluate the relevance of the study's findings and recommendations to proposals made by H.R. 3134 and our proposal for a profitability reporting program. We were able to analyze the study and attempted to evaluate the reliability of MAC's raw data. We were denied access to the data. MAC officials told us that we could not have access because its disclosure may affect the stock prices of the participating companies. Since we did not have access to the data for the nine programs, we analyzed the methodology in relation to the study's implications to the defense industry as a whole.

We took the following steps to assess the assumptions that MAC used to measure the impact of the six policy changes.

- Researched and analyzed relevant legislation to understand statutory changes affecting defense procurement.

- Obtained the annual reports for 78 of the largest defense contractors to obtain financial and tax information about these companies. (Our sample of 78 firms represents many of the largest defense contractors for 1987 (collectively accounting for approximately 62 percent of DOD's 1987 prime contract dollar awards)). We also discussed the use of CCM with some of the defense contractors in our sample.
- Examined professional publications on accounting, corporate finance, and taxation in evaluating MAC's methodology and assumptions.
- Used computer files from DD Form 1499—Report of Individual Contract Profit Plan[1] —to test and evaluate MAC's assumptions to determine the new profit policy's impact on negotiated profit. In testing MAC's assumptions, we used MAC's methodology and converted all cost-type contracts to fixed price and applied a 78-percent progress payment rate.[2] In addition, we included in our calculation, the working capital adjustment factor in DOD's profit policy which MAC did not consider. The working capital adjustment factor is indexed to fluctuations in the progress payment rate.
- Gathered data on the historical percentages of fixed-price versus cost-type RDT&E contract actions from fiscal years 1984 to 1987 using the computer files from DD Form 350—Individual Contracting Action Report.
- Analyzed historical recovery rates on IR&D and B&P costs using the Defense Contract Audit Agency's reports entitled Independent Research and Development and Bid and Proposal Cost Incurred by Major Defense Contractors.
- Obtained an extensive sample of data on progress payments to determine the impact flexible progress payment rates have on average progress payment rates.
- Met with members of the MAC Group study team and a representative of the defense associations that sponsored the study to discuss the study's methodology, assumptions, and results.
- Held discussions with DOD and Air Force officials and independent defense industry analysts regarding various aspects of the study.

An independent consultant's panel reviewed a draft version of our report. Their comments were considered in the report. (See app. V for listing of consultant panel members.)

[1]DOD's new system, DD Form 1547, was not available at the time of our study.

[2]The 78-percent progress payment rate represents the impact that flexible progress payment rates will have on the overall average progress payment rate. Flexible progress payment rates are higher than the customary rate.

Our review was performed in accordance with generally accepted government auditing standards from April 1988 to September 1988.

Comments From the MAC Group

Note: GAO comments supplementing those in the report text appear at the end of this appendix.

THE MAC GROUP

MEMORANDUM

TO: Mr. Paul F. Math
Senior Associate Director
U.S. General Accounting Office
Washington, D.C. 20548

FROM: The MAC Group, Inc.

DATE: December 29, 1988

RE: GAO's Assessment of the MAC Group's Report, *The Impact on Defense Industrial Capability of Changes in Procurement and Tax Policy, 1984–1987*

We appreciate the opportunity to comment on GAO's draft analysis of our report, *The Impact on Defense Industrial Capability of Changes in Procurement and Tax Policy, 1984–1987*. In this response, we identify and discuss 24 specific criticisms made by GAO in its letter to Congressman Bennett and in its detailed analysis. We accept only one of these criticisms. The MAC Group stands on its findings and conclusions as stated in our report.

GAO agrees that each of the changes we analyzed has an impact on defense profitability and financial requirements, but it claims that in each case we overstated the amount of the impact. However, GAO does not point out that we deliberately used conservative assumptions that would cause some of our impacts to be *understated*. Nor does GAO mention the unfavorable changes that we listed but did not attempt to quantify. The reader is therefore left with the impression that we were making the worst possible case in order to support the position of the defense industry.

We strongly disagree with this implication. We are experienced professionals, and we are confident we did a thoroughly professional, objective job in making estimates of amounts that are inherently uncertain. We deliberately took a conservative approach, as indicated in Attachment A.

GAO does not mention that our analysis shows that the net present value of the programs in the base case was a positive $117 million, and under the new conditions would have been a negative $208 million, a swing of $325 million. Its assessment, even if correct, would at most decrease the magnitude of this shift somewhat. GAO does not challenge the direction of the change.

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We note also that GAO formed a consultant's panel of distinguished persons, and it states that "not every member of the Panel was in agreement with all aspects of the GAO report." We think the Congress would be interested in being informed about the areas of disagreement.

In Attachment B, we explain why GAO's assessment is deficient.

GAO describes two developments that occurred subsequent to the issuance of our report. These developments increase the industry's profitability. However, GAO does not even mention a third subsequent development, namely, the further curtailment on the use of the completed contract method for income tax purposes. This unfavorable development offsets a considerable fraction of the two favorable changes. GAO's failure to mention this unfavorable development is an example of the bias that is evident throughout their analysis.

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ATTACHMENT A
EXAMPLES OF CONSERVATISM IN THE MAC GROUP'S ANALYSIS

1. We used a discount rate of 10 percent, which is lower than the cost of capital in the industry (p. 15). If we had used a higher rate, the difference between the present values of the base case and the impact case would have been greater.

2. We did not take into account the effect of the elimination of the investment tax credit (p. A-9). If we had done so, the tax payments in the impact case would have been greater.

3. We did not take into account the effect of decelerating depreciation schedules (p. A-9). If we had done so, the tax payments in the impact case would have been greater.

4. We converted cost-type contracts to a fixed-price basis, which increased the profitability of the programs by approximately 0.5 percentage points.

5. In calculating the impact of unallowable costs, we included only those cost items that were clearly reflected by recent changes in the rules; we did not take other possible items into account (p. A-10).

6. We assumed that the balance sheet impact of the requirement to capitalize special tooling covered only the period 1981-1985 (p. A-16). A good case can be made for starting with an earlier year, which would have produced a higher asset value and consequently an additional financing requirement. Also, in the analysis of individual programs, we assumed that the cost of capitalized special tooling purchased near the end of the program would be recovered in fewer than 10 years. If we had used a 10-year period, the profitability would have been greater.

7. We assumed that cost sharing was limited to advanced development contracts (p. A-11). There is some evidence that cost sharing would also be applicable to full-scale engineering development contracts.

8. We did not attempt to quantify the following factors:

- Increased use of dual sourcing.
- Premature fixed pricing of production options.
- Increase in auditing and paperwork requirements.
- Delay in payment of invoices.
- Change in the ownership of data rights.
- Criminal penalties relating to the procurement process.
- Cost of warranty provisions.

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ATTACHMENT B
DETAILED ANALYSIS

In this attachment, we summarize GAO's assessments and describe why all but one of them are invalid. The first section discusses general points that GAO makes in its letter to Congressman Bennett and in the latter part of its Appendix I. The second section discusses the specific criticisms that GAO makes about our analysis.

GENERAL CRITICISMS

Representativeness of the Sample

GAO Criticism: The MAC Group sample was not representative of the defense industry; in particular, the 100 largest defense prime contractors.

See comment 1.

MAC Group Response: Our study was intentionally focused on companies that develop and produce weapons systems. The companies in our sample were awarded 24% of the DoD prime contract awards in 1986. The programs studied were for a variety of products produced for Army, Navy, and Air Force. The 100 largest defense prime contractors include petroleum companies, professional service companies, university and other nonprofit organizations, and airlines. We did not assert that our report measured the impact, if any, on these companies, and we are surprised that anyone would infer that we intended to do so, or that the experience of these companies would be relevant to policy makers.

Accrual Accounting

GAO Claim: The MAC Group study used accrual accounting data, whereas it should have used cash flow data.

MAC Group Response: Our income tax numbers are on essentially a cash basis. We did not include deferred income taxes as outflows. For most other items, the difference between accrual accounting (which measures when expenses were incurred) and cash accounting (which measures when the bills were paid) is trivial for numbers reported on an annual basis, as ours were.

The only significant difference is in the treatment of fixed assets. Accrual accounting records the depreciation on these assets during the years in which they were used, whereas cash accounting records the outflow for these assets in the year in which they were acquired, which is an earlier year. Initially, we tried to get cash-flow information by working backwards from changes in the CAS-414 "cost-of-money" allowance, which reflected changes in asset acquisitions. However, many of our respondents did not have information that would permit tying these data to specific programs. We therefore had to settle for the use of depreciation as a substitute. We do not consider this to be a significant flaw in the analysis for two reasons: (1) we were primarily interested in the *difference* between the base case and the impact case, and this practice affected both cases; and (2) in any event, the effect on the overall result was trivial. Our rationale is explained on pages A-7 and A-8 of the report.

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Behavior Modification

GAO Claim: The MAC Group assumed that companies would not change their behavior to accommodate to the new policies, whereas the evidence indicates that companies actually do change their behavior.

MAC Group Response: We did not make such an assumption. In fact, we specifically requested respondents to consider behavioral changes, especially as they were evidenced in their budgets and long-range plans. Moreover, progress payments, income tax regulations, profit policy, and capitalization of special tooling are requirements that a company cannot control.

As evidence to support its assertion that companies would change their behavior, GAO quotes one paragraph from Lockheed's 1987 annual report, which states that the effects "have not been material" and that the company will try to "mitigate" future impacts. Since the effects of recent changes were only beginning to be felt in 1987, and since there is very little that Lockheed, or anyone, can do to mitigate their impact, this statement is flimsy evidence at best. We are amazed that GAO would use one paragraph from one company's annual report as the basis for a generalization about the behavior of the whole defense industry. Our report contains many statements from industry executives and financial analysts giving their judgments that the impact will indeed be serious.

Moreover, despite Lockheed's alleged optimism, its recent price/earnings ratio was 6 to 1, compared with the S&P average of 12 to 1. Evidently, investors don't think that Lockheed's outlook is all that rosy.

Inadequate Data

GAO Claim: The GAO draft letter to Congressman Bennett (p. 2) states that the data in the MAC Group report are so limited that its "conclusions cannot be validated for the defense industry as a whole."

MAC Group Response: We did not claim that the $8.5 billion of additional financing for the nine companies, the reduction in the present value of the nine programs from a positive $117 million to a negative $208 million, or any of the other data in the report can be extrapolated to obtain totals for the defense industry as a whole. We did conclude that the negative impact of the six changes would have a substantial effect on the financial requirements and profitability of the defense industry. We believe that the six factors would have a negative impact on all companies that produce hardware. There might indeed be little impact on companies that provide services, or commodities such as petroleum, but no such companies were included in the study.

See comment 2.

GAO implies that it would be feasible to make an analysis that would permit conclusions about the magnitude of the dollar impact on the whole industry. Such an implication shows little appreciation for the difficulty of finding companies with program records going back for many years, for persuading these companies to compile these data in the format required for the study, and to calculate the impact data for each of these companies. We doubt that such a study, even if it could be conducted, would change the conclusion that the effect would be serious.

GAO also does not mention the fact that informed financial analysts, who certainly are not biased in favor of defense companies, have also concluded that the effect would be serious.

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Inability to Audit Data

GAO Claim: The data in the the MAC Group study were not audited, and GAO could not check the validity of the numbers.

MAC Group Response: For reasons given in the report, the MAC Group agreed to keep the company submissions confidential. However, the company data merely established a base case, and the important part of the analysis was calculating the impact of the six factors on this base case. The report contains 21 pages of data for a sample program and a sample company that shows how these calculations were made. Exactly the same computer program was used for the analysis of each of the nine companies. If GAO had the data for these individual programs, it could check the accuracy of the data input and the arithmetic calculations that the computer made, but nothing more. Unless there were input or arithmetic errors, which is highly unlikely, the impact would not be changed by such an audit.

ANALYSIS OF SPECIFIC FACTORS

Completed Contract Method

GAO Assessments: (1) Based on information in their 1987 annual reports, only 34 of the 78 largest defense contractors used the completed contract method (CCM). This demonstrates that the MAC Group sample was not representative of the industry (p. 24).

(2) The MAC Group assumed that contractors used CCM throughout the program, whereas in fact the IRS did not permit them to do so until 1976; this overstated the tax impact stated in the MAC report (pp. 27, 28).

(3) The MAC Group's estimate of a $3.9 billion additional financing requirement resulting from the reduction in the use of the CCM method is too high because a sample of defense contractors actually reduced the amount of their CCM deferral in 1987 (p. 26).

(4) If contractors foresaw a larger tax liability, they could raise prices to recover the loss (p. 27).

See comment 3.

MAC Group Responses: (1) GAO's facts were based on its reading of annual reports; GAO is incorrect. We obtained the list of the 44 contractors who presumably did not use CCM, and found that 5 of them (Computer Sciences Corporation, Eaton Corporation, ITT, Singer Company, and Westinghouse Electric) were listed on *another* GAO report as using CCM. At least 15 others do not use CCM because they are service, petroleum, or transportation companies and do not have contracts that qualify. The GAO report on CCM lists the 50 largest companies in terms of FY 1987 prime contract awards, and stated that 32 companies used CCM. We compared this list with the OSD report on FY 87 contract awards and calculated that these 32 companies had 79 percent of the total dollar amount awarded to the top 50 companies. The dollar amount is much more important than the number of companies.

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(2) Again, GAO's facts are incorrect. The Internal Revenue Service permitted aerospace companies to use the completed contract method beginning in 1973, not 1976, and several companies did so.

The MAC Group did err in assuming that the three programs that began prior to 1973 would have used the completed contract method from the beginning. However, this error led to an *understatement* of the impact. If these companies had used cost sharing but without CCM, they would have reported a tax loss on these contracts each year, rather than deferring the loss until each contract was completed.

(3) GAO is comparing the change in the balance sheet liability in a single year with the total financing requirement. This comparison makes no sense.

(4) This argument scarcely needs answering. How could contractors raise prices? Does anyone seriously think that the Congress would take away CCM with one law and give the equivalent amount back with another?

Annual Financing Requirements

GAO Assessment: The MAC Group reported the cumulative effect of the changes on financing requirements after their impact was fully felt, whereas it should have estimated the impact on each year (pp. 25, 26).

MAC Group Response: We did consider requesting the companies to make year-by-year estimates, but these estimates would have been based on the companies' judgments about the timing of cash flows, profits, dividend policy, capital spending, and additional borrowing or equity financing. These numbers would have been soft and therefore subject to criticism. We wanted to reduce the amount of judgment to a minimum. The aggregate effect of the annual changes, if they could have been estimated, would have been the same as the cumulative impact that appears in the MAC Group report. The only difference would have been that the analysis would then show the amount of new financing that would have been obtained by retaining earnings and from external sources, respectively. We concluded that such a separation would have been entirely speculative, and we stopped with the conclusion that the firms would have had to obtain $8.5 billion from all its sources. As our interviews with financial analysts demonstrated, the prospects of obtaining $8.5 billion, or any substantial fraction of this amount, would be extremely poor.

Our rationale is explained in Appendix B of the report, which GAO does not mention.

Understatement of Profits

GAO Assessment: Of the reported $520 million increase in contractors' equity in 1985 resulting from lower tax rates, MAC treated only $295 million as income. It should have treated the whole $520 million as income (pp. 28, 29).

MAC Response: As GAO admits, the $295 million is the correct amount of the income tax effect on income in 1985. The other $225 million is an adjustment to

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equity that arises because the lower tax rate will result in a reduction of payments in future years; therefore, the liability account should be reduced correspondingly. As the GAO points out, our treatment is in accordance with generally accepted accounting principles. More importantly, the $225 million reduction is not a source of financing in 1985; only the $295 million is available for that purpose. The $225 million is merely a bookkeeping entry, shifting this amount from liability to equity. The calculation is explained on Page A-43 of the MAC Group report.

Lower Progress Payment Rates

GAO Assessment: (1) A GAO study shows that the impact of flexible progress payment rates is 4 percentage points, rather than the 3 percentage points used in the MAC Group report (p. 30).

(2) Progress payment rates have varied over the years, but the MAC Group study does not recognize this. The reason is that progress payment rates fluctuate with interest costs (p. 31).

MAC Group Response: (1) The MAC Group does not have the GAO data and cannot validate its conclusion, in contrast with the complete methodology that the MAC Group provided in its study. Our source was the DoD.

(2) The attached graph (Exhibit 1) shows that there is a tendency for progress payment rates to vary with interest rates, but the relationship is by no means close (the coefficient of correlation is only 0.56). We used the 1986 progress payment rate of 75 percent, adjusted upward by 3 percentage points to reflect DoD's experience with flexible progress payment rates. The 75 percent rate was established as part of the effort to reduce defense expenditures to meet the Gramm-Rudman-Hollings Act requirement; it had nothing to do with a change in interest rates. We studied the impact of the progress payment rate effective in 1987; possible future changes in rates are of course unknown, and in any event are irrelevant for the purpose of our study. The MAC Group study concludes that policies should be changed so as to provide some combination of reduced risk, increased profitability, and adequate financing; we did not, however, recommend specific changes, such as a change in progress payment rates.

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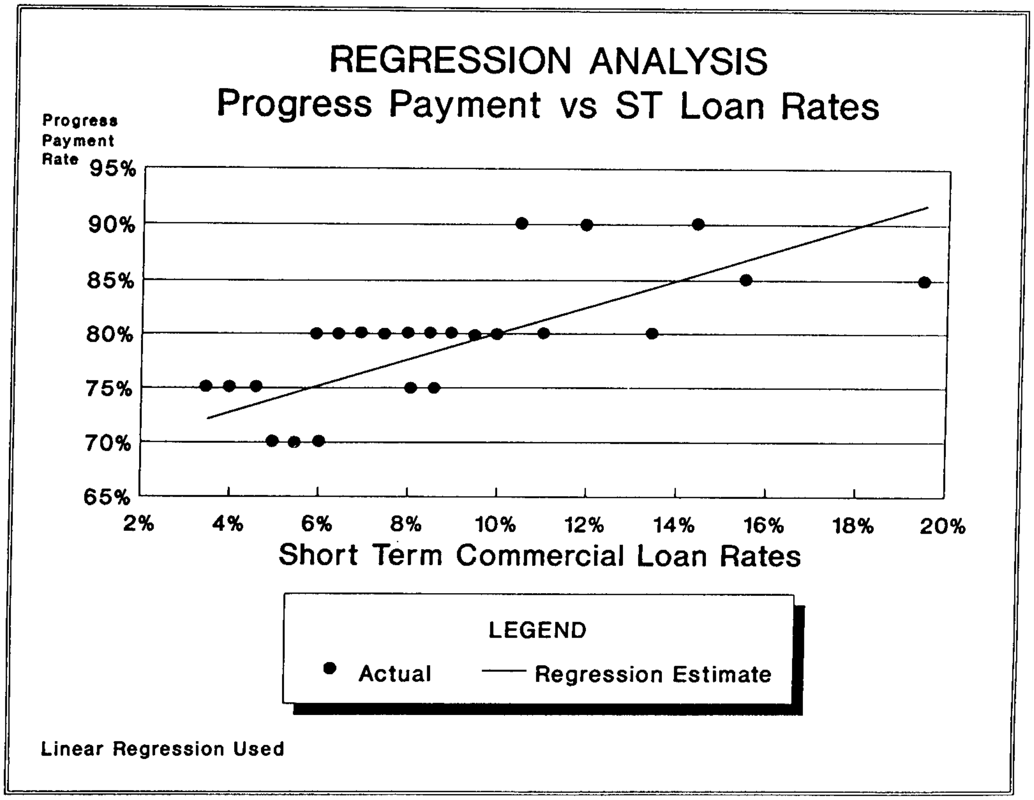
EXHIBIT 1



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Slower Special Tooling Investment Recovery

GAO Assessment: (1) The MAC Group assumed that contractors would capitalize 50 percent of the cost of special tooling, as required by 1987 legislation. It did not take account of the change in this requirement made in 1988 (pp. 33, 34).

(2) MAC did not allow for the cost-of-money payment on the capitalized special tooling (p. 34).

MAC Group Response: (1) Our report analyzed changes made in the period 1984 through 1987. Obviously, it could not analyze changes made in 1988.

(2) Similarly, at the time of our study, there was no provision made for the recovery of the cost of money on the capitalized assets. Such a provision was made after our study was completed.

Profit Policy

GAO Assessment: (1) Although the DoD did state that its policy was to reduce profits by 1 percent, there may be many offsetting influences, and the net result may be that profits will actually increase rather than decrease. In particular, additional capital investments would generate an additional return because of the CAS 414 allowance for the cost of money (pp. 35, 36).

(2) The MAC Group assumed that all companies' sales were defense in calculating the impact on profit, but used the actual mix of commercial and defense sales in estimating additional financing requirements (p. 35).

(3) The MAC Group assumed that all contracts were negotiated using the weighted guidelines, which was not the case (p. 36).

MAC Group Response: (1) The DFAIR profitability study referred to by GAO unequivocally recommended a decrease in defense profitability by 1 *percentage point* (which is approximately a 10 *percent* reduction, not 1 percent as stated by GAO). It did not mention any of the offsetting tendencies now listed by GAO (and allegedly based on statements by unnamed DoD officials). Indeed, if these offsetting tendencies existed, DoD's specific objective would not be accomplished.

See comment 4.

As we pointed out in Appendix D of the MAC Group report, the 1986 GAO profitability study found that defense industry return on assets for the period 1975–1983 was 22.6 percent, compared with 12.9 percent for durable goods manufacturers. In our opinion, this is not a valid comparison. Nevertheless, it implies that GAO thinks that defense profits were about double what they should have been. (GAO did not make a specific recommendation as to the amount that profits should be reduced.) We used the reduction in the DFAIR study, which was extremely modest compared with GAO's.

As for the possibility of increasing profits by increasing capital investments, our analysis shows that defense contractors will lack the capital to meet foreseen capital requirements; therefore, they are likely to *decrease*, not increase, capital investments.

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(2) GAO's statement is misleading. We made two separate analyses. One analysis (p. A–44) dealt only with the companies' defense sales. The other (p. A–41) assumed that the profit margin on defense sales was the same percentage of revenue as the profit margin for the entire company, and that additional financing was based on the company's actual mix of commercial and defense sales. Each analysis was used correctly for its intended purpose.

(3) Contracts that were negotiated without using the weighted guidelines were competitive. Although there was no way to obtain quantative data about the effect of the new environment on the profitability of such contracts, industry sources advised us that the effect would be to reduce profits by substantially more than 1 percentage point. We therefore believe that our assumption of a 1 percentage point reduction in profits on all contracts was conservative.

Cost Sharing

GAO Assessment: (1) There is no basis for the MAC Group assumption that cost sharing would be 20 percent of the total costs of development contracts. Moreover, the FY 1989 Defense Authorization Act limits the situations in which cost sharing will occur (pp. 36, 37).

(2) The MAC Group assumed that there is a shift to fixed-price development contracts, which is not the case. Furthermore, recent legislation requires DoD to limit the use of such contracts (pp. 37, 38).

MAC Group Response: (1) We did *not* apply the 20 percent to all development contracts; we applied it only to advanced development contracts, which for our programs amounted to 5 percent of total program costs. We did not apply anything to full-scale engineering development contracts, which for our programs amounted to 20 percent of total program costs.

Cost sharing is a recent DoD policy, and there is no way of knowing how great the impact of this policy will be. There is no way of deciding what the number will be until there has been experience with the new policy. Unquestionably, there will be an impact; otherwise, the policy is meaningless. Contractors gave us estimates ranging up to 35 percent, but they stated that these were only rough estimates. Our estimate of 20 percent, applied only to advanced development contracts, was conservative.

(2) Although the situation was changed by recent legislation, it is patently unfair to criticize the MAC Group for not recognizing legislation that occurred after the completion of its report—legislation that may, in fact, have been influenced by the report. That the Congress changed the practice indicates that the practice was recognized as having detrimental consequences.

Lower Allowable Cost Recovery

See comment 5.

GAO Assessment: Although recent regulations increased the types of costs that are not allowable, contractors should adapt to these regulations and not incur these costs. A recent GAO study indicates that contractors are doing this (pp. 38, 39).

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MAC Group Response: This is wishful thinking. We asked respondents to estimate the costs that they would continue to incur for sound business reasons. Presumably, these estimate would be included in the company's own budgets.

The study that GAO cites is based on subjective information obtained from eight contractors, and was limited to the single item of travel and per diem costs. The study concludes: "It is too early to fully assess the effect of the new travel regulations. . . ." The GAO criticism of the MAC Group report cites *one* contractor who stated that it is "taking [unspecified] steps to encourage its employees to use travel arrangements that approximate the per diem expense levels set for federal employees." These data are by no means an adequate basis for a generalization.

Lower IR&D and B&P Cost Recovery:

GAO Assessment: The recovery rates used by the nine companies in our sample were different from those in two Defense Contract Audit Agency studies of 100+ firms (pp. 39-44).

MAC Response: GAO does not challenge the validity of the data in our sample. The DCAA study contains data from more companies. We have not analyzed the DCAA data. We note that the companies used in its samples are different in the two years, although a correct analysis would use the same companies in both years. Nevertheless, it may be that our sample is not representative with respect to this item. If so, and making the worst-case assumption (namely, that the IR&D and B&P cap had no effect on profitability), the effect would be to improve the present value of the programs by $17 million (from the calculated $208 million negative), and to reduce the calculated financing requirements by 3 percent. Our comments about the undesirable consequences of this cap on the amount of research and development work done by the industry are unchanged.

Page references in MAC's "GAO Assessment" refer to an earlier draft. Page references in "MAC Response" refer to the MAC study.

GAO Comments

1. We believe that the MAC study did purport to be describing the entire defense industry and therefore, in evaluating the impact of various policy changes on the defense industry these important companies must be considered, namely petroleum companies, professional service companies, and so forth.

2. We would not advocate the use of "program records" to measure the profitability of the defense industry. We recognize that such an approach would be too costly. The profitability reporting program that we would support would use segment level accounting and financial data.

3. We believe that these 15 other companies do represent an important part of the defense industry and therefore, in evaluating the impact of various policy changes on the entire defense industry, these important companies must be considered.

4. Our critique of the MAC study did not discuss the return on assets calculation contained in an earlier GAO report. We do not believe it is germane. In the context of a discussion of whether negotiated profits are likely to increase as a result of increasing capital investments, the question of what methodology to use to measure realized return on assets is not relevant to the discussion of profits that are negotiated for facilities capital employed.

5. In commenting on lower allowable cost recovery, MAC quoted us as saying that "contractors should adapt to these regulations and not incur these costs." We are not in a position to comment on whether contractors should adapt to these regulations. We only point out that our previous study and one prominent defense contractor's financial statement have shown that some contractors do adapt to these regulations.

Comments From DOD

ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, D.C. 20301-8000

PRODUCTION AND LOGISTICS
(P/CPF)

January 26, 1989

Mr. Frank C. Conahan
Assistant Comptroller General
National Security and
International Affairs Division
United States General Accounting Office
Washington, DC 20548

Dear Mr. Conahan:

This is the Department of Defense (DoD) response to the General Accounting Office (GAO) draft report entitled "GOVERNMENT CONTRACTING: Assessment of the Study of Changes in Procurement and Tax Policy on the Defense Industrial Capability," dated December 1, 1988 (GAO Code 396126), OSD Case 7849.

In its report, the GAO expressed concern that adequate accounting and financial data are not available to measure the impact that existing policy and policy changes are having on overall defense contractor profitability. The GAO noted that efforts like the MAC Group study are not an adequate substitute for regular data gathering and systematic evaluation of the cumulative effect of policies on the financial condition of contractors. The GAO reiterated its support for the adoption of the previously proposed Profitability Reporting Program so that necessary data can be gathered, verified, and studied.

See comment 1.

The DoD continues to disagree strongly with the GAO on the subject of profitability reporting. Detailed comments on this subject were provided to the GAO on March 25, 1987, in response to the GAO exposure draft entitled "GOVERNMENT CONTRACTING: A Proposal for a Program to Study the Profitability of Government Contractors" (GAO Code 396801, OSD Case 7177). While a profitability reporting program would provide overall levels of profitability for defense contractors on a cumulative basis, it would not provide data necessary to determine the impact of individual policies. While the GAO states that adequate accounting and financial data are not available to measure the impact of existing policies and changes, the GAO was nonetheless able to use readily available public data bases that reflect trends in defense industry performance in order to assess the assumptions made by the MAC Group and analyze the methodology used. The full financial impact of various policy changes will not be reflected in defense firms' financial data for significant periods of time because the policy changes are usually applied on a prospective basis and do not generally impact existing contracts.

The DoD has performed studies of defense industry profitability in the past, without a legislated requirement, and will continue to perform profit studies in the future, as needed. A reporting system for profit objectives and negotiated profit amounts has been maintained by the DoD since 1964, and has been used extensively to develop profit policy and assess its results. Data from this reporting system have also been used by the Department to estimate the impact on the defense industry from changes in policies related to special tooling and test equipment reimbursements, changes in progress payment rates, and reductions in profit levels.

Additional DoD comments on the draft report are provided in the enclosure. Thank you for providing the DoD with the opportunity to comment.

Sincerely,

Merle Freitag

Merle Freitag, MG, USA
Military Deputy to ASD(P&L)

Enclosure

GAO DRAFT REPORT - DATED DECEMBER 1, 1988
(GAO CODE 396126) OSD CASE 7849
"GOVERNMENT CONTRACTING: ASSESSMENT OF
THE STUDY OF CHANGES IN PROCUREMENT PROCUREMENT AND TAX POLICY
ON THE DEFENSE INDUSTRIAL CAPABILITY"

ADDITIONAL DEPARTMENT OF DEFENSE (DoD) COMMENTS

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The Impact of Lower Progress Payment Rates

The GAO stated that the DoD profit policy explicitly compensates companies for the expense of financing contract costs, and is constructed so that profit negotiated for working capital automatically changes inversely to changes in progress payment rates. The GAO further states that the DoD profit policy is designed to offset the need for increased financing because of decreases in the progress payment rate.

These statements should be modified to reflect the fact that the profit policy is constructed so that DoD profit objectives for working capital automatically change inversely to changes in progress payment rates, and that the profit policy is designed to provide additional profit recognition because of decreases in the progress payment rate.

The Impact of DoD's New Profit Policy

The GAO states that the DoD believes it is highly unlikely that the 1 percent decrease in negotiated profits resulting from changes in the profit policy will be realized because of changed conditions.

A more accurate representation of the DoD position is that profit objectives are highly dependent on a number of factors, which are continually changing -- such as (1) the level of progress payments, (2) interest rates, (3) the length of contract, (4) contract type mix, and (5) contractor investment in facilities and equipment. If each of these factors remained constant, the 1 percent decrease in profit objectives would be achieved based upon the changes made to the profit policy. However, if a significant factor (such as contractor investment in facilities) were to decrease, an even greater decrease in profit objectives could be realized. Conversely, if contractor investment in facilities were to increase, the 1 percent decrease in profit objectives probably would not be realized.

As the GAO indicated, not all procurements are negotiated using the weighted guidelines approach, so it would not be appropriate to project a 1 percent across-the-board reduction in profits. The DoD estimates that approximately 25 percent of the dollar value of DoD contracts awarded utilize the weighted guidelines approach.

Enclosure

The following GAO Comment is on the Department of Defense's letter dated January 26, 1989.

GAO Comment

1. DOD agreed that a profitability reporting program would provide overall levels of profitability for defense contractors on a cumulative basis. We believe that data on overall levels of profitability would be useful information to decisionmakers when considering policy changes that are expected to impinge on defense contractors' profitability. For example, if overall levels of profitability are too low for the defense industry, then this information would be useful before considering a policy change that would be expected to further lower profitability.

Listing of Consultant Panel Members

Mr. Arthur Schoenhaut
Former Executive Secretary of the Cost Accounting Standards Board
Consultant - Watkins, Schreer and Stein, P.A., CPAS

Mr. Robert Moot
Former Vice President, AMTRAK
Former Assistant Secretary of Defense (Comptroller)
Former Administrator
Small Business Administration

Mr. David Mosso
Financial Accounting Standards Board
Former Fiscal Assistant Secretary of the Treasury
Former Vice Chairman, Financial
Accounting Standards Board

Mr. Barry Shillito
Former Chairman, Teledyne International
Former Assistant Secretary of Defense (Installations and Logistics)
Former President
Logistics Management Institute

Dr. Louis Rosen
National Director, Government Contract Services
Arthur Young & Company

Mr. David Westermann
Former Forrestal Industry Chair
Defense Systems Management College

Professor John C. Burton[1]
Graduate School of Business
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